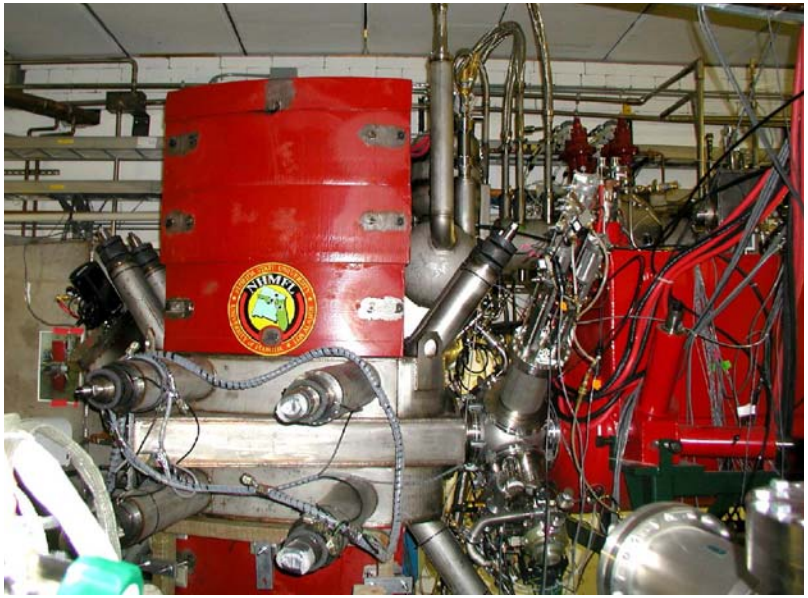
NHMFL Sweeper Magnet Installation at the National Superconducting Cyclotron Laboratory

In September 1998 the National High Magnetic Field Laboratory (NHMFL) began a collaborative project with the National Superconducting Cyclotron Laboratory (NSCL) at Michigan State University to develop a "Sweeper Magnet" for use in nuclear physics experiments. The NHMFL led the effort to design and build the magnet. The NSCL led the design and construction of detectors, systems integration and will operate the magnet as a user facility.

In March 2004, the magnet was completed and tested at the NHMFL with only one training quench (see NHMFL Reports vol.11, no.2, 2004). Since then, the magnet has been installed and successfully operated at the NSCL.

The NHMFL is committed to applying its unique magnet design, engineering and construction capabilities to address emerging scientific needs at other universities and national laboratories.



NHMFL Sweeper Magnet in place in the N4 vault at the National Superconducting Cyclotron Laboratory. The quadrupole triplet is to the right and the focal plane detector is to the left.

The sweeper magnet…is crucial for our program to study neutron unbound nuclei and the spectroscopy of neutron unbound states. The recently upgraded Coupled Cyclotron Facility at the National Superconducting Cyclotron Laboratory…has significantly increased the beam intensities of exotic nuclei which makes many more nuclei at and beyond the neutron dripline nuclei accessible.

The sweeper is essential for the study of these nuclei.

- Michael Thoennessen, Associate Director for Nuclear Science
National Superconducting Cyclotron Laboratory

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